UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 9

75 Hawthorne Street
San Francisco, CA 94105-3901

March 16, 2005

Mr. Monte McCue
Director of Plant Operations
U.S. Filter Westates
P.O. Box 3308
Parker, AZ 85344

RE: Transmittal of Conditional Approval for December 2003 submittal of "Carbon Reactivation Furnace Performance Demonstration Test Plan, Revision 1" and "Working Draft Risk Assessment Workplan for the Westates Carbon Arizona, Inc. Carbon Reactivation Facility", prepared by Focus Environmental, Inc., November 2003, U.S. Filter Westates facility, Parker, Arizona.

Dear Mr. McCue:

The U.S. Environmental Protection Agency (USEPA) has completed its review of the subject documents which were submitted by U.S. Filter Westates as part of its application for a RCRA hazardous waste treatment permit for the carbon regeneration unit at the Parker facility. USEPA hereby approves the air emissions test plan and risk assessment workplan subject to the conditions outlined in Attachments A, B, C, and D of this letter.

U.S. Filter Westates shall notify USEPA of its proposed schedule for conducting the air emissions test within 30 days of receipt of this transmittal.

Should you have any comments or questions, please contact Mary Blevins, of my staff, at (415) 972-3357.

Sincerely,

Steve Armann, Manager
RCRA Facility Management Office

att

cc: Daniel Eddy, Jr., Tribal Chairman
Duncan Fisher, Acting Director, CRIT Environmental Protection Office
Eric Shepard, CRIT Attorney General's Office

Attachment A
Text Conditions for Air Emissions Test, U.S. Filter Westates, Parker, Arizona

1. Westates shall sample 25% of the containers of waste feed for metals and organic constituents during the air emissions test. This condition is to ensure representative sampling occurs during the air emissions test.

2. Westates shall conduct a particle size distribution sampling test instead of using data to model. This condition revises relevant text in Section 5.1.4.9 of the Air Emissions Test Plan which still shows data being used in lieu of conducting actual particle size distribution testing.

3. Westates shall use the attached SRE methodology for extrapolation. This is provided as Attachment B.

4. Westates shall use the maximum stack gas concentration, as extrapolated from the three runs, in developing the emission rate estimate for use in the risk assessment as per EPA guidance in Section 2.2.1.1. of the Human Health Risk Assessment Protocol for Hazardous Waste Combustors.

5. Westates shall use the attached revised Table 7.1. during the air emissions test. EPA understands that Westates will provide EPA with the data in revised Table 7.1 on a daily basis during the air emissions test as per Section 8.5.1 of the Air Emissions Test Plan. EPA expects to receive this data by the next day after each run. This table is provided as Attachment C.

6. Westates shall use the attached revised Table 4-2. during the air emissions test. This table identifies approximate operating conditions for the test. This table is provided as Attachment D.

7. EPA understands that Westates will provide real time monitoring data during the air emissions test. The instantaneous readings identified in Attachment C are the one-minute readings that are the average of 15 second readings, as per requirements of 40 Code of Federal Regulations 63.1209(a)(6).

8. EPA understands that Westates does not intend to blow down Tank T-9.

9. EPA understands Westates intends to comply with requirements of 40 CFR 63.1209(m)(1)(i)(B)(1) by using a flow meter.

Attachment B

Methodology for Calculating System Removal Efficiency and Unspiked Metals Extrapolation

For metals of interest that will not be spiked, EPA requires that the lowest System Removal Efficiency (SRE) result from the spiked metals be determined by equation 1. The lowest SRE (being a single data point) will be used in equation 2 to determine extrapolated value for metals feed and be used to calculate the projected emission rate for risk assessment purposes. During the air emissions test, Westates is spiking the RF-2 feed with two metals (i.e., lead and chromium). If subsequent waste analysis identifies a metal from the same group that was not spiked during the test (e.g., beryllium) in the waste feed, then minimum SRE would need to be applied to determine the most conservative waste feed rate limit. The use of surrogate metals to establish unspiked metals feed rates is consistent with the Hazardous Waste Combustors (HWC) MACT rule.

A high temperature test, which is the worst-case scenario for metals emissions, has not been included as part of the air emissions test. Therefore, Westates shall use the minimum SRE as an extrapolation factor for calculating the system removal efficiency for the metals that were not spiked during the test. Calculation of the SRE shall be done similar to the method for calculating DRE as shown in the EPA guidance document titled Handbook: Guidance on Setting Permit Conditions and Reporting Trial Burn Results (EPA/625/6-89/019).

The equation for deriving the SRE is as follows:

EQUATION1

$$SRE = \frac{\text{spiked metal}_{in} - \text{spiked metal}_{out}}{\text{spiked metal}_{in}}_{APCE} \times 100\%$$

spiked metal in = maximum feed rate of spiked metal
spiked metals out = is the maximum emission rate of the spiked metals
APCE = Air Pollution Control Equipment

Westates should select the minimum SRE as the extrapolation value for the unspiked metal. SREs for volatile and semi-volatile metals should be calculated separately. Westates may extrapolate other metals in the feed stream using the SRE minimum value if they wish using the following table. Inputs and results should be in Dry Standard Cubic Meters (dscm) and grams per second (gr/sec).

Volatility classification for the risk assessment metals are given in the table below. Classification is based on the following considerations:

1. The HWC MACT regulations classify Hg as a volatile metal. Westates will do the same.

2. The HWC MACT regulations classify Cd and Pb as semi-volatile metals. Westates will do the same.

3. The HWC MACT regulations classify As, Be, and Cr as low-volatility metals. Westates will do the same.

4. EPA's "Risk Burn Guidance for Hazardous Waste Combustion Facilities" EPA/530-R-01-001, July 2001, presents metals volatility information in Section 6.1. That discussion suggests that aluminum is best classified as a semi-volatile metal and that silver is best classified as a low-volatility metal. Further, a figure of overlapping classifications is provided as Figure 6-2, which shows potential classifications for 16 metals. For the metals not discussed previously, Westates has chosen the most conservative classification from Figure 6-2, with the exception of selenium. The figure shows selenium as either a volatile or semi-volatile metal. Westates proposes to classify selenuim as a semi-volatile metal. No SRE will be determined for volatile metals (Hg).

Risk Metal	Low Volatile	Semi-Volatile
Aluminum		X
Antimony		X
Arsenic	X	
Barium		X
Beryllium	X	
Cadmium		X
Chromium	X	
Copper		X
Cobalt		X
Lead		X
Mercury (Volatile) use MTEC		
Manganese	X	
Nickel		X
Selenium		X
Silver	X	
Thallium		X
Vanadium		X
Zinc		X

Therefore, if it is determined that a risk-based limit is needed for a metal which is not spiked, the proposed approach would be to determine from the risk assessment what the maximum allowable emission rate would be, and then to apply the SRE for that metal's volatility class (the SRE for Pb as representative or SVM or the SRE of Cr as representative of LVM) to calculate a maximum allowable feed rate.

Attachment C

Revised Table 7.1. Monitoring Parameters for Air Emissions Test

Operating Condition	AWFCO	Purpose	Comments	Test Only Data/ Permit Condition
A. Spent carbon feed rate*	Yes	Compliance with 40 CFR 63.1209	Block hourly rolling average	Permit condition
1. Spent carbon feed rate	No	As per EPA guidance document: Handbook: Guidance on Setting Permit Conditions and Reporting Trial Burn Results (EPA/625/6-89/019), Appendix B.2.3	Pounds/minute; instantaneous rate	Test only
B. Residence time	No	Compliance with 40 CFR 63.1206(b)(11) and 1207(f)(1)(ix)	42 minutes	Test only
1. Rabble arm rotational speed	No	Validate residence time	Per minute	Test only
C. Hearth 1 temperature minimum	Yes	Compliance with 40 CFR 63.1209(j)(1)/(k)(2)	Hourly rolling average	Permit condition
1. Instantaneous Hearth 1 temperature	No	Validate Hearth 1 temperature minimum	Instantaneous	Test only
D. Hearth 2 temperature minimum	No	Compliance with 40 CFR 63.1209(j)(1)/(k)(2)	Hourly rolling average	Test only
1. Instantaneous Hearth 2 temperature	No	Validate Hearth 2 temperature minimum	Instantaneous	Test only
E. Hearth 3 temperature minimum	No	Compliance with 40 CFR 63.1209(j)(1)/(k)(2)	Hourly rolling average	Test only
1. Instantaneous Hearth 3 temperature	No	Validate Hearth 3 temperature minimum	Instantaneous	Test only
F. Hearth 4 temperature minimum	No	Comply with 40 CFR 63.1209(j)(1)/(k)(2)	Hourly rolling average	Test only
1. Instantaneous Hearth 4 temperature	No	Validate Hearth 4 temperature minimum	Instantaneous	Test only

G. Hearth 5 temperature minimum and maximum range	Yes	Compliance with 40 CFR 63.1209(j)(1)/(k)(2)	Hourly rolling average	Permit condition
1. Instantaneous Hearth 5 temperature	No	Validate Hearth 5 temperature minimum	Instantaneous	Test only
H. Minimum afterburner temperature*	Yes	Compliance with 40 CFR 63.1209(j)(1)(i)	Measure at exit; hourly rolling average	Permit condition
1. Minimum afterburner temperature	No	Validate minimum afterburner temperature	Instantaneous	Test only
I. Maximum air speed through the system	No	Compliance with 40 CFR 63.1209(k)(3)(i)	Hourly rolling average; as calculated	Test only
1. Instantaneous maximum air speed through the system	No	Validate maximum air speed through system	Instantaneous; as calculated	Test only
J. Venturi scrubber differential pressure drop*	Yes		Hourly rolling average	Permit condition
K. Minimum scrubber flow rate through Venturi/Quench*	Yes		Hourly rolling average	Permit condition
L. Venturi pH to wet scrubber	No	As per EPA guidance document: Handbook: Guidance on Setting Permit Conditions and Reporting Trial Burn Results (EPA/625/6-89/019) Chapter 2, Table 2.1	Instantaneous	Test only
M. Venturi Liquid/Gas ratio	No	As per EPA guidance document: Handbook: Guidance on Setting Permit Conditions and Reporting Trial Burn Results (EPA/625/6-89/019) Chapter 2, Table 2.1	Instantaneous (see K)	Test only
N. Maximum temperature at exit of Venturi	No	Compliance with 40 CFR 63 1209(g)(2) and as per EPA guidance document: Handbook: Guidance on Setting Permit Conditions and Reporting Trial Burn Results (EPA/625/6-89/019) Chapter 4, Table 4.4 (example test case)	Instantaneous	Test only
O. Packed bed pH*	Yes		In standard units; Hourly rolling average	Permit condition

P. Minimum scrubber flow rate through packed bed *	Yes		Hourly rolling average	Permit condition
Q. Packed bed differential pressure*	Yes			Permit condition
R. Venturi scrubber blowdown rate*	Yes	Compliance with 40 CFR 63.1209(m)(1)(ii)	Hourly rolling average	Permit condition
S. Minimum WESP secondary voltage*	Yes		Hourly rolling average; 14KVDC secondary voltage	Permit condition
T. Maximum stack gas flow rate*	Yes		Hourly rolling average; actual metered value; 10000 ACFM	Permit condition
U. CO*	Yes		Hourly rolling average	Permit condition
1. CO	No	Validate CO	Instantaneous	Test only
V. Percent O2	No	Validate percent O2	Instantaneous	Test only
W. Fan on/off	Yes	Compliance with 40 CFR 63.1209(g)(2)	*On*	Permit condition
X. Total hydrocarbons (strip charts)*	No	Compliance with 40 CFR 63.1209((a)(1)	< 100 ppm CO or <10 ppm as propane	Report on daily basis for test only
Y. Isokinetic percent for each train for each run	No	Compliance with 40 CFR 63.1209(j)	At end of each run; provide by next day	Test only
Z. Spiked metals feed rate low volatile metals	No	Compliance with 40 CFR 63.1209(c)	Hourly rolling average; daily during test	Test only
1. Spiked metals feed rate low volatile metals	No	Validate spiked metals feed rate low volatile metals	Instantaneous	Test only
AA. Spiked metals feed rate semi-volatile metals	No	Compliance with 40 CFR 63.1209(c)	Hourly rolling average; daily during test	Test only
1. Spiked metals feed rate semi-volatile metals	No	Validate spiked metals feed rate semi-volatile metals	Instantaneous	Test only
BB. Spiked POHC 1 feed rate	No	Compliance with 40 CFR 63.1209(c)	Hourly rolling average; daily during test	Test only
1. Spiked POHC 1 feed rate	No	Validate spiked POHC 1 feed rate	Instantaneous	Test only
CC. Spiked POHC 2 feed rate	No	Compliance with 40 CFR 63.1209(c)	Hourly rolling average; daily during test	Test only

1. Spiked POHC 2 feed rate	No	Validate spiked POHC 2 feed rate	Instantaneous	Test only
DD. Spiked organics feed rate	No	Compliance with 40 CFR 63.1209(c)	Hourly rolling average; daily during test	Test only
1. Spiked organics feed rate	No	Validate spiked organics feed rate	Instantaneous	Test only
EE. Semivolatile metals feed rate*		Compliance with 40 CFR 63.1203	Provide as soon as available; 12 hour rolling average; include feed metals for a total feed rate	Permit condition
1. Semivolatile metals feed rate		Validate semivolatile metals feed rate	Provide as soon as available; Hourly rolling average	Test only
FF. Low volatile metals feed rate*			Provide as soon as available; 12 hour rolling average	Permit condition
1. Low volatile metals feed rate		Validate low volatile metals feed rate	Provide as soon as available; Hourly rolling average	Test only

GG. Mercury (MTEC) feed rate*			Provide as soon as available; 12 hour rolling average	Permit condition
1. Mercury (MTEC) feed rate		Validate mercury feed rate	Provide as soon as available; Hourly rolling average	Test only
HH. Total metals feed rates for all 18 risk metals			Provide as soon as available; 12 hour rolling average	Permit condition
1. Total metals feed rates for all 18 risk metals		Validate total metals feed rate	Provide as soon as available; Hourly rolling average	Test only

II. Maximum chlorine/chloride feed rate		As per EPA guidance document: Handbook: Guidance on Setting Permit Conditions and Reporting Trial Burn Results (EPA/625/6-89/019), Section 2.1.6	Provide as soon as available; 12 hour rolling average	Permit condition
1. Maximum chlorine/chloride feed rate			Provide as soon as available; Hourly rolling average	Test only
JJ. Organic feed rate total		Compliance with 40 CFR 63.1209(g)(2) and 40 CFR 63.1209(c)	Provide as soon as available	Permit condition

1. Parameters noted with an asterisk are monitored operating conditions proposed by U.S. Filter Westates in accordance with Air Emissions Test Plan Section 8.5.1.

Attachment D

Revised Table 4-2. Performance Test Target Operating Conditions

Operating Condition	**Approximate operating condition for demonstration**
Spent carbon feed rate - Block hour	3000 lbs/hr
Spent carbon feed rate (instantaneous rate)	50 lbs/minute
Residence time	42 minutes
Rabble arm rotational speed	TBD Per minute
Hearth 1 temperature (hourly rolling average)	600 F
Instantaneous Hearth 1 temperature	600 F (to support verification of the hourly rolling average calculations/ algorithm)
Hearth 5 temperature (hourly rolling average)	1450 F
Instantaneous Hearth 5 temperature	1450 F (to support verification of the hourly rolling average calculations/ algorithm)
Afterburner temperature (hourly rolling average)	1750 F
Instantaneous Afterburner temperature	1750 F (to support verification of the hourly rolling average calculations/ algorithm)
Venturi scrubber differential pressure drop	15 inches water column
Scrubber flow rate through Venturi	35 gpm
Instantaneous temperature at exit of Venturi	250 F (tag number TE-557)
Packed bed pH	3
Scrubber flow rate through packed bed	60 gpm
Packed bed differential pressure	0.2 inches water column
Scrubber blowdown flow rate	30 gpm

WESP secondary voltage	14 KVDC
Stack gas velocity (hourly rolling average)	10,000 ACFM
Stack gas velocity (instantaneous, actual cubic feet per minute)	10,000 ACFM
CO Hourly rolling average	100 PPMV @ 7% O2, dry
CO instantaneous	100 PPMV @ 7% O2, dry
Percent O2 instantaneous	7%
Fan on/off	On
Total hydrocarbons (strip charts) maximum	10 PPMV as propane @7% O2, dry (only needed during DRE testing; not an on-going requirement)
Spiked metals feed rate low volatile metals as chromium	0.35 lbs/hour
Spiked metals feed rate semi-volatile metals as lead	0.35 lbs/hr
Spiked POHC 1 feed rate as chlorobenzene	33 lbs/hr
Spiked POHC 2 feed rate as tetrachloroethene	33 lbs/hr
Spiked toluene feed rate	16 lbs/hr
Spiked 1,1,1 trichloroethane, Naphthalene and Ethylene glycol	7 lbs/hr
Spiked total chlorine/chloride feed rate	51 lbs/hr